Seattle City Light

Lighting Lamp and Ballast Waste Disposal Guidelines

Lamp Handling and Disposal

Handling and disposal of waste lamps are regulated by the Washington Department of Ecology's *Universal Waste Rule.* Businesses and facilities are required to recycle their spent lamps or send them to a permitted hazardous waste disposal company.

Fluorescent lamps and high intensity discharge (HIDs) lamps contain elemental mercury mixed with phosphor powders. In Washington State, the Department of Ecology's Universal Waste Rule for dangerous waste lamps applies to fluorescent lamps (tubes, compact and circular), metal halide, mercury vapor, high-pressure sodium and neon lamps.

Crushing lamps releases mercury vapor which is difficult to contain and creates a potential health hazard. Under Ecology's Universal Waste rule, on-site crushing of lamps is not allowed. Crushing is a fully regulated "treatment by generator" activity, subject to much more complex requirements than Universal Waste. Maintaining used lamps intact prevents mercury exposure, and promotes safe and effective recycling.

Follow the lamp handling guidelines below to enhance workplace safety and potentially reduce the cost of recycling.

Lamp Handling

a. When lamps are removed from a fixture, immediately place them in a container, e.g. a box used for new lamps, to prevent accidental damage. Do not tape lamps together or include packing material.

b. Boxes may be placed on pallets but not stacked over 4 feet high to prevent crushing. Large numbers of cartons on pallets may be shrink-wrapped.

c. Identify the boxes with labels or marking pen – e.g., "USED LAMPS" and the accumulation start date.

d. If you break a lamp, carefully sweep it up, place in a plastic bag and place in a 5-gallon container with a lid. Small quantities of broken lamps can be recycled with most vendors. Label the container – e.g., "BROKEN LAMPS."

e. Boxes of lamps should be stored under cover and transported in a closed truck to prevent the boxes from getting wet.

Lamp Disposal

Commercial Fluorescent and other Discharge (Ballasted) Lamps

As required by the Universal Waste Rule for dangerous waste lamps, lamps may be recycled or disposed at a hazardous waste treatment/disposal facility. Recycling is recommended. A lamp recycling facility will separate the lamp into component materials for reuse. For a list of lamp recyclers, go to: http://www.govlink.org/hazwaste/business/fluor/vendors.htm or

http://www.cityofseattle.net/light/conserve/

call the Business Waste Line at 206-296-3976.

In Seattle and King County (and many other areas), solid waste landfills and transfer stations no longer accept mercury-containing lamps from commercial and residential sources. No lamps from commercial facilities may go into the garbage. This includes common area lamps from multifamily housing. Other mercury-containing wastes, such as thermostats and switches, are also not accepted.

As with all businesses, "small quantity generators" are required to recycle hazardous lamps or dispose of them as hazardous waste; SQGs are exempt from more complex handling and reporting requirements that face large generators. The SQG "exemption" does not allow improper disposal of waste lamps. For more information, call the Business Waste Line (see below). Many lamp recycling companies accept small quantities of lamps. Some distributors will also take lamps back for recycling.

For a list of lamp recyclers or for questions about commercial lamp recycling, go to http://www.govlink.org/hazwaste/business/fluor/or call the Business Waste Line 206-296-3976.

While recycling is recommended, it is also legal to dispose of lamps through a permitted handler/transporter or regulated destination hazardous waste treatment/disposal facility.

b. Household Fluorescent Lamps

- Residents should bring spent fluorescent lamps from individual households to a free Household Hazardous Waste collection site. (Seattle Municipal Code 21.36.026). For location and hours of Seattle HHW sites or the King County Wastemobile, call the Household Hazards Line (M-F, 9am – 4:30pm, except holidays) at 206-296-4692.

- Residents may also check into returning spent lamps for proper disposal to retail stores where they were purchased. Owners of one- to four-unit multifamily housing complexes may also bring mercury lamps, ballasts and other household hazardous waste to the free Seattle HHW sites or the King County Wastemobile. For information, call the Household Hazards Line (M-F, 9am – 4:30pm, except holidays) at 206-296-4692.

c. Low-Mercury and "Green Tip" Lamps

Beginning in January 2005, King County government plans to tighten restrictions on mercury disposal by banning disposal of "green tip" lamps at all solid waste facilities. No green tips or "low mercury" lamps from commercial or residential sources may go in the garbage. This is consistent with policies already in place in the City of Seattle and Snohomish County. For information on the ban, go to http://www.metrokc.gov/dnrp/swd/facilities/rules.asp#amendment.

Ballast Handling and Disposal

Most fluorescent lighting ballasts manufactured prior to 1979 contain polychlorinated biphenyls (PCBs). Handling and disposal of PCB ballasts is regulated by federal and state regulations including the federal Toxic Substances Control Act (TSCA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund).

Seattle City Light is concerned about the potential health and environmental impacts that may result from improper handling and disposal of PCB ballasts and offers the following information and suggested practices. The information provided is up-to-date as of January 2001. Check with the Environmental Protection Agency (EPA) and the Washington State Department of Ecology for the latest information (contact information provided below).

Why care about the handling and disposal of PCB ballasts?
PCBs are a probable human carcinogen and persist in the environment. Exposure to them can cause chloracne, liver damage, nausea, dizziness, bronchitis, and eye irritation. PCBs may enter the body through the lungs, gastrointestinal tract, and the skin. If PCB ballasts are handled or disposed of improperly, PCBs may pose significant health risks for exposed individuals and contaminate the environment. Follow the handling and disposal guidelines described in this document to reduce these risks.

According to CERCLA (Superfund), waste generators can be fined if they dispose of ballasts somewhere that becomes a Superfund site, even if they followed all existing federal and state regulations. The illegal disposal of hazardous materials is one of the few instances in which corporate officers can be held personally criminally liable.

How can I tell if a lighting ballast contains PCBs?
All ballasts manufactured since 1979 that do not contain PCBs should be clearly labeled with the statement "No PCBs". For ballasts manufactured prior to 1979 or for ballasts that contain no statement regarding PCB content, assume they contain PCBs.

How do I identify a leaking ballast?
Most PCB leaks are visible. PCBs used in light ballasts are a clear or yellow oil. (Others PCB forms may be solid.) If the surface of a ballast is oily, it has leaked. It is advisable to treat any ballast leaking a asphalt potting compound (a black, tarry substance) as if it were PCB contaminated.

1. Handling and Disposal of Non-PCB Ballasts
Recycling of non-PCB ballasts is recommended.

Ballasts labeled “No PCBs,” and unlabeled ballasts that have been tested and contain no PCBs, may be sent to a municipal waste landfill with a written waste clearance.

In King County, request a written waste clearance (for up to a year at a time) by calling Public Health - Seattle & King County Waste Characterization at 206-296-4633.

2. Handling and Disposal of Non-leaking PCB Ballasts
Non-leaking PCB ballasts should be recycled, incinerated, or disposed at an EPA approved

facility. Information on EPA approved commercial storage and disposal facilities, and related resources is included below.

Recycling of non-leaking PCB ballasts is recommended. The recycler should remove the capacitor (containing the PCBs) from the ballast, recycle the uncontaminated portions of the ballast, and dispose of the capacitor in an EPA approved hazardous waste landfill or incinerator.

Incineration permanently eliminates PCBs from the waste stream and therefore limits any future liability from potential leaks and cleanup costs.

Some facilities elect to leave PCB ballasts in the ceiling rather than dispose of them according to EPA guidelines. This defers the cost of removal and disposal, but in the event of a building fire, the PCBs in the ballasts and combustion by-products may contaminate large portions of the building.

Electrical contractors are generally experienced with ballast replacement, but below are some basic safety guidelines for handling non-leaking PCB ballasts.

PCB Ballast Handling Guidelines (non-leaking ballasts)

a. If the ballast has been burning or smoking, cut the power off at the panel. Immediately vacate and ventilate the room. Allow the ballasts to cool for at least 20-30 minutes before replacing.

b. Always wear chemically resistant gloves when removing or handling PCB ballasts, even if they do not appear to be leaking.

c. Always separate leaking ballasts from non-leaking ballasts. For leaking ballasts, see below.

d. Pack non-leaking ballasts into approved DOT 17C or 17H drums as soon as possible.

e. All drums of non-leaking and leaking ballasts should contain a label with the following information:
   - name and address of the generator
   - date the ballasts were first removed
   - description of the material (e.g. Discarded Light Ballasts)
   - DOT shipping description (i.e. RQ, Polychlorinated Biphenyls, 9, UN2315, PGII).

f. Careful packing allows more ballasts per drum, reducing disposal costs per ballast. Do not overpack the drums or crush the ballasts. For safety purposes, drum weight should not exceed 1000 pounds.

g. If the ballasts will be disposed of in a chemical waste landfill, place 6-12 inches of absorbent material (kitty litter, sawdust, vermiculite, etc.) in the bottom of the barrel and in the spaces between ballasts.

h. If the ballasts will be disposed of in a PCB incinerator or sent to a recycler, place 1-3 inches of absorbent material in the bottom of the barrel.

i. Do not seal the containers until after the transporter or disposer has inspected the

contents.

j. Storage of small quantities (less than about ten – 55 gal drums) of non-leaking ballasts is not regulated. However, you should dispose of them within three months of removal to reduce the chance of accidental damage.

k. Work with an EPA approved storage or disposal firm (see below) or a hazardous waste transporter. Hazardous waste transporters are trained and equipped to handle ballasts and accidental spills, etc. Many transporters offer a full "turnkey" program for pick-up, transportation, and disposal of lighting waste.

l. Maintain permanent records of PCB ballast disposal.

3. Handling and Disposal of Leaking PCB ballasts

Leaking PCB ballasts should be handled and disposed of by personnel or contractors specifically trained and authorized to do so. The surrounding area may need to be properly cleaned up.

Leaking PCB ballasts must be disposed at an incinerator or disposal facility regulated by the federal Toxics Substances Control Act (TSCA). For proper packing, storage, transportation, and disposal information, call the TSCA hotline at 202-554-1404. Dispose of leaking ballasts within 30 days of removal from service if your facility does not meet the PCB storage requirements outlined in TSCA regulations.

A trained professional wearing protective equipment will wrap leaking ballasts in double plastic bags and immediately pack them in approved Department of Transportation (DOT) 17C or 17H drums with a yellow "Caution Contains PCBs" label attached. These standard labels are obtained from most label companies. The leaking ballasts are now ready for temporary storage prior to shipment to the disposal site.

Additional Resources

For more information on lighting waste disposal, contact your City Light Project Manager or the Business Waste Line at 206-296-3976.

For more information on Washington State's Universal Waste Rule for dangerous waste lamps, see Ecology publication #00-04-020 downloadable in pdf format from their website: www.ecy.wa.gov/pubs/0004020.pdf

For a list of lamp and ballast recyclers, go to:
http://www.govlink.org/hazwaste/business/fluor/vendors.htm

For a list of Hazardous Waste Disposal facilities, go to:
http://www.govlink.org/hazwaste/business/wastedirectory/wastedetails.cfm?wasteID=99

For a list of EPA approved facilities that handle PCB Ballast, go to:
http://www.govlink.org/hazwaste/business/wastedirectory/wastedetails.cfm?wasteID=153